

Department of Energy
Richland Operations Office
P.O. Box 550
Richland, Washington 99352

0058923

FEB 7 2003

03-RCA-0136

Mr. Michael A. Wilson, Program Manager
Nuclear Waste Program
State of Washington
Department of Ecology
1315 W. Fourth Avenue
Kennewick, Washington 99336

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EDMC

Dear Mr. Wilson:

**CERTIFICATION OF CLOSURE FOR THE 1324-N SURFACE IMPOUNDMENT AND
1324-NA PERCOLATION POND**

Closure activities for the 1324-N Surface Impoundment and the 1324-NA Percolation Pond (also known as 120-N-2 and 120-N-1 waste treatment sites, respectively) have been completed. Attachment 1 is the Owner/Operator Closure Certification, the independent Professional Engineer's (PE) Certification of Closure statement (Attachment 2), and the independent registered PE Closure Certification Report (Attachment 3) required for closure. The closure certifications were prepared in accordance with Washington Administrative Code (WAC) 173-303-610 and the approved 100-NR-1 Treatment, Storage, and Disposal Units Corrective Measures Study/Closure Plan (DOE/RL-96-39).

Closure activities were initiated in September 2001, pursuant to the closure plan (Attachment 42 of the "Hanford Facility Resource Conservation and Recovery Act Permit") that was approved by Ecology in a letter dated July 16, 1998. Closure activities consisted of excavation and disposal of debris from the 1324-N/NA Liquid Waste Disposal Facilities to an inert demolition landfill followed by verification sampling of the remaining soils. Verification sample results confirm residential clean-up levels were achieved for these sites. The independent PE certification and report state that all closure activities were performed in accordance with the approved plan.

Groundwater contamination attributable to these facilities remains above the secondary drinking water standard for sulfates (250 mg/L). Continued groundwater monitoring is required. Post-closure actions required to be taken by the U.S. Department of Energy, Richland Operations Office, during the post-closure care period for these facilities will be requested, via a permit modification, upon Ecology's approval of the closure certifications.

Mr. Michael A. Wilson
03-RCA-0136

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FEB 7 2003

If you have any questions, please contact Ellen Dagan, of my staff, on (509) 376-3811.

Sincerely,

A handwritten signature in cursive script, reading "Joel Hebdon".

Joel Hebdon, Director
Regulatory Compliance and Analysis Division

RCA:EBD

Attachments

cc w/attachs:

N. Ceto, EPA

D. A. Faulk, EPA

J. Price, Ecology (2)

Administrative Record

Benton County Auditor

cc w/o attachs:

R. L. Donahoe, BHI


V. R. Dronen, BHI

H. B. Hathaway, RL

J. A. Hedges, Ecology

**OWNER/OPERATOR
CLOSURE CERTIFICATION
FOR
1324-N AND 1324 -NA LIQUID WASTE DISPOSAL FACILITIES**


We, the undersigned, hereby certify that 1324-N and 1324-NA Liquid Waste Disposal Facilities (also referred as 120-N-2 and 120-N-1 waste treatment sites, respectively) closure activities were performed in accordance with the specifications in the Closure Plan, approved by Ecology in a letter dated July 16, 1998.



Owner/Operator
Keith A. Klein, Manager (for)
U.S. Department of Energy
Richland Operations Office

2/13/03

Date




Co-Operator
Michael C. Hughes, President
Bechtel Hanford, Inc.

Jan 30, 2003

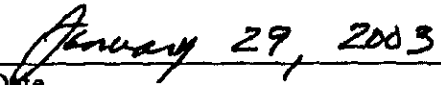
Date

**CERTIFICATION OF CLOSURE
OF THE 1324-NA AND 1324-N WASTE
TREATMENT, STORAGE, AND DISPOSAL SITES**

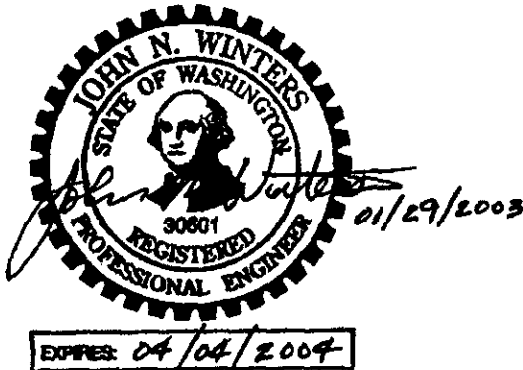
As a registered professional engineer, I certify that the 1324-NA and 1324-N waste treatment sites have been closed in accordance with the closure plan for these sites. This certification is based on my understanding of the closure requirements, periodic visits to the sites to witness closure activity progress, discussions of closure progress with the project staff who monitor daily activities and compliance with the approved closure plan, and review of the cleanup verification package. Further, my review activities and certification have been an independent activity in accordance with *Washington Administrative Code* 173-303-610(6).



John N. Winters, PE
State of Washington, License No. 30601
CH2M HILL, Inc.
3190 George Washington Way
Richland, Washington 99352



Date



**Independent Registered Professional Engineer's
Closure Certification Report
For 1324-NA and 1324-N Sites**

Introduction

This report was prepared to document the independent closure certification activities performed by John Winters of CH2M HILL, Inc.

The closure certification report addresses two treatment, storage, and disposal (TSD) sites 1324-NA and 1324-N, on the Hanford Site. The closure of these sites is governed by two documents: 1) *100-NR-1 Treatment, Storage, and Disposal Units Corrective Measures Study/Closure Plan*, (DOE-RL 2002); and 2) *Sampling and Analysis Plan for the 100-NR-1 Treatment, Storage, and Disposal Units During Remediation and Closeout* (SAP) (DOE-RL 2000).

Closure certification is required by *Washington Administrative Code* (WAC) 173-303-610(6).

Background

As described in the closure plan (DOE-RL 2002), 1324-NA Percolation Pond was a large, unlined, inactive pond that was used to treat corrosive wastes. The pond was placed in service in August 1977 and was used to treat regeneration wastes from the 163-N Demineralization Plant and to dispose of nondangerous filter backwash from the 183-N Filtered Water Plant. The 1324-N Surface Impoundment facility was an inactive basin that was used as a neutralization pond for the corrosive wastes generated from the 163-N Demineralization Plant. This pond had a double liner as well as a leak detection and leachate collection system. Details of the operational background for these sites are provided in DOE-RL (2002).

Closure of these units commenced pursuant to WAC 173-303-610 and the Hanford Facility Dangerous Waste Permit (Ecology 1994).

Planned Closure Activities

Appendix B of DOE-RL (2002) presents the closure plan for the 1324-NA and 1324-N sites. The planned activities at these sites included removal of structures, piping removal or characterization as clean, evaluation of soil data, waste management, and site restoration.

Closure Activities Completed

Based on site visits, review of the *Cleanup Verification Package/Clean Closure Report for the Soil Column of the 120-N-1 and 120-N-2 Dangerous Waste Treatment and Disposal Sites and*

the 100-N-58 Site (BHI 2002) (CVP), and discussions with project staff, the following closure activities have been completed in accordance with the closure plan:

- **Removal of Structures.** The Hypalon™ liner and leak detection system were removed from 1324-N along with the sampling shed.

The closure plan included perimeter fence removal. Perimeter fencing was removed from the south side and southwest corner of this project site. On the north, west, and east sides of the site, a security fence for the adjacent 100-N Area facilities acted as a perimeter fence section for the 1324-NA and 1324-N sites. Because this security fence is still required for these adjacent facilities, this section of security fence was not removed.

- **Characterization of the Pipelines as Clean.** The two, inactive, influent pipelines to 1324-NA and 1324-N were located by potholing, and samples were taken of the pipeline scale. As described in the CVP (BHI 2002), analysis of these samples and further evaluation of the contaminants showed that closure plan performance standards could be met with these pipelines left in place. Therefore, as part of the closure activities, these pipelines were abandoned in place. As part of the abandonment process, where exposed, the pipe ends were capped with grout. Capping the pipe ends was not a requirement of the closure plan.
- **Evaluation of Soil Data.** A soil investigation conducted on these sites in accordance with the closure plan (DOE-RL 2002) indicated that these sites do not require soil remediation. However, due to a former overflow area at the northeast corner of the 1324-N site, two soil samples were taken at that location. The analysis of these samples showed the levels of contamination meet the closure performance standards and the applicable cleanup levels (BHI 2002).
- **Waste Management.** Demolition debris removed from the 1324-NA and 1324-N sites included concrete and asphalt rubble, high-density polyethylene liner, polyvinyl chloride pipe, and chainlink fence material. This material was disposed as noncontaminated waste in the Environmental Restoration Contractor Inert/Demolition Landfill site (183-H Clearwell). Disposal of waste manifests were reviewed as part of this certification process and show proper disposal of the waste in accordance with the closure plan.
- **Site Restoration.** Project personnel confirmed, by email, that the backfill of the sites is complete and the site has been revegetated. This site restoration step included grading the site to match the adjacent existing grade and seeding the site with appropriate seed mix.
- **Cleanup Verification Package.** Tables 3 and 4 of the CVP show that the soil and pipeline scale samples demonstrate closure performance standards, and applicable cleanup levels have been met.

100-N-58 Site

The 100-N-58 site is adjacent to the 1324-NA and 1324-N sites. However, it is not a CERCLA or RCRA site and, therefore, is not covered by this certification of closure. For additional information on this site, refer to the reclassification information that is included in the Executive Summary of the CVP (BHI 2002).

Conclusion

Based on the review of the CVP, other project-related references, and personal site visits (see Attachment A), it is concluded that the closures of the 1324-NA and 1324-N sites were completed in accordance with the approved closure plan (DOE-RL 2002). The CVP concludes that completed closure activities for the 1324-NA and 1324-N sites and associated pipelines meet the soil closure performance standards and that the soils underlying these sites and the abandoned influent pipelines are verified to meet the cleanup levels and performance standards of the closure plan (BHI 2002).

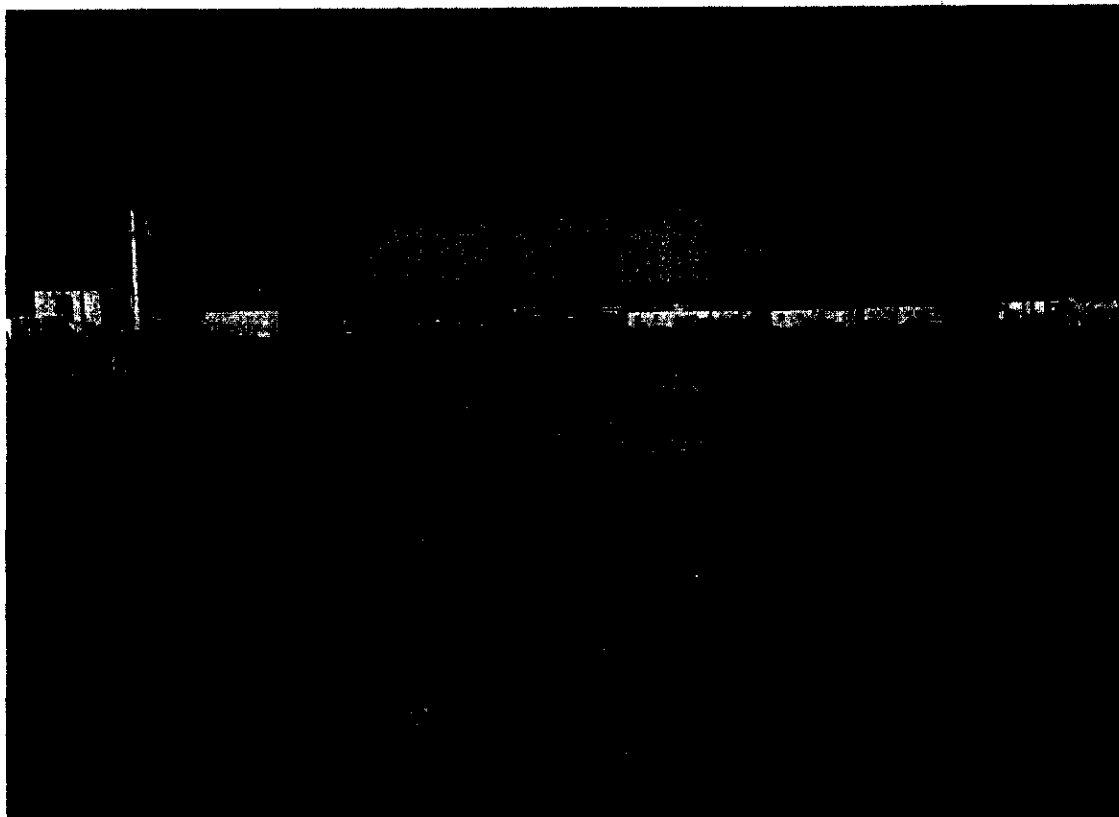
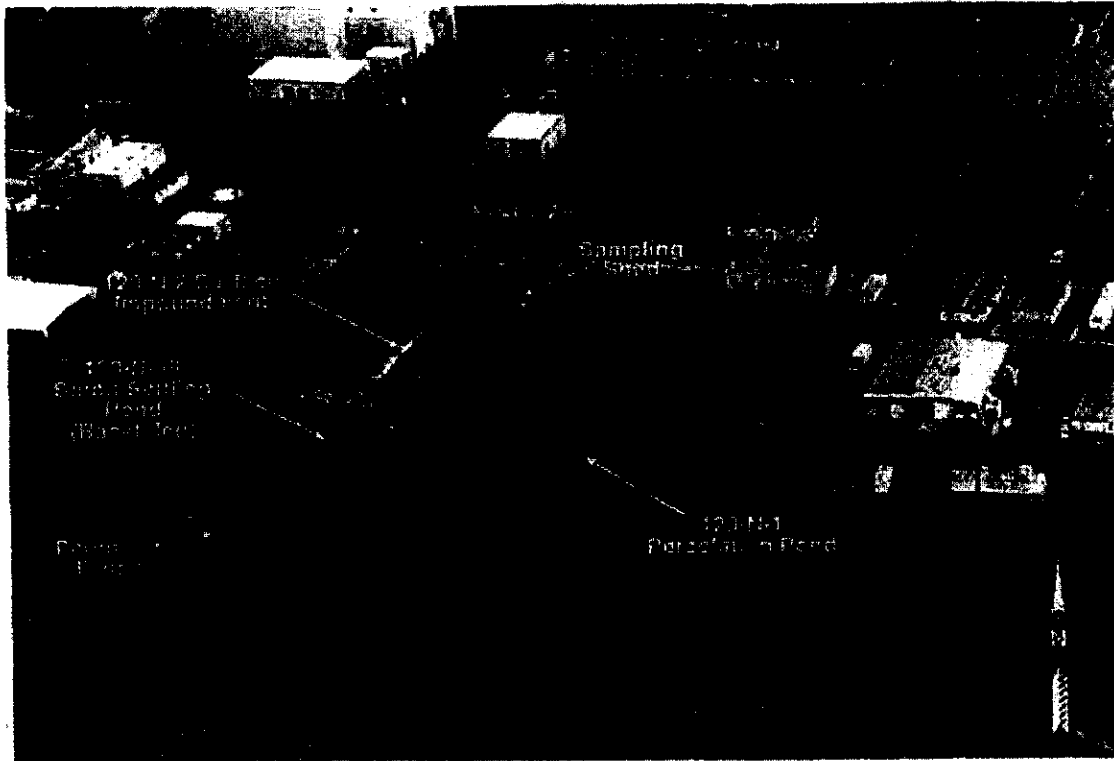
References

- BHI, 2002, *Cleanup Verification Package/Clean Closure Report for the Soil Column of the 120-N-1 and 120-N-2 Dangerous Waste Treatment and Disposal Sites and the 100-N-58 Site*, CVP-2001-00021, Rev. 0, Bechtel Hanford, Inc., Richland, Washington.
- DOE-RL, 2000, *Sampling and Analysis Plan for the 100-NR-1 Treatment, Storage, and Disposal Units During Remediation and Closeout*, DOE/RL-2000-07, Rev. 1, U.S. Department of Energy, Richland Operations Office, Richland, Washington.
- DOE-RL, 2002, *100-NR-1 Treatment, Storage, and Disposal Units Corrective Measures Study/Closure Plan*, DOE/RL-96-39, Rev. 1, U.S. Department of Energy, Richland Operations Office, Richland, Washington.
- Ecology, 1994, *Dangerous Waste Portion of the Resource Conservation and Recovery Act Permit for the Treatment, Storage, and Disposal of Dangerous Waste*, August 1994, as amended, Washington State Department of Ecology, Olympia, Washington.
- WAC 173-303, 1993, "Dangerous Waste Regulations," *Washington Administrative Code*, as amended.

ATTACHMENT A
1324-NA AND 1324-N SITES VISIT SUMMARY

- October 31, 2000 – Meeting at 100-N with J. Fancher/CH2M HILL Hanford, Inc. to discuss remediation and closure activities, proposed approach of site visits on roughly a quarterly basis to monitor progress, and closure activities for each site. At that time, the 1324-N liner had been removed and was stored with other demolition materials at the site. During that discussion, I was told that the adjacent 100-N-58 site is not a treatment, storage and disposal site and would not be part of the certification of closure. I was provided with copies of the closure plan and a site map showing the two sites and adjacent facilities.
- March 15, 2001 – Since last visit, influent pipeline scale samples were taken near the 1324-NA/1324-N site. Making preparations to pothole and take additional pipe scale samples near 163-N. No other activities.
- May 22, 2001 – No site visit. Discussed progress at soil remediation sites. Present focus is 116-N-3 site. No activities at these two sites.
- September 5, 2001 – Additional potholing for pipeline sampling was completed. Modeling based on earlier pipeline sampling (three samples total) is underway.
- January 2, 2002 - No activity. Bechtel Hanford, Inc. evaluating when funding will be available from U.S. Department of Energy for backfilling the 1324-NA/1324-N sites. Remaining demolition debris has been removed from site. Waste disposal manifests were received on October 23, 2001.
- June 9, 2002 - No backfilling yet. Funding may be available in the fiscal year 2003 budget for backfilling. Making plans for plugging the influent pipeline ends with grout.
- September 18, 2002 – Influent pipeline ends have been grouted at both ends. Received photos of the grouting process.
- December 12, 2002 – Thompson Mechanical Constructors backfilling of 1324-NA and 1324-N is nearly complete. Took photos of the backfilling operation.

**Aerial View of 1324-N and 1324-NA
1993 Photo**



**1324-N and 1324-NA after Remediation, Backfill, and Revegetation
January 2003 Photo**

BRIEFING MEMORANDUM
CERTIFICATION OF CLOSURE FOR THE 1324-N SURFACE
IMPOUNDMENT AND THE 1324-NA PERCOLATION POND

BACKGROUND & HISTORY

The 1324-N Surface Impoundment and 1324-NA Percolation Pond (also referred to as 120-N-2 and 120-N-1 waste treatment sites, respectively), and associated pipelines, are treatment, storage, and disposal units located in the western portion of the 100-N Area. From 1977 to 1983, these liquid waste disposal facilities (LWDFs) received regenerated effluent from the 163-N Demineralization Plant and the backwash from the 183-N Filter Water Plant.

From 1983 to 1986, a series of upgrades were performed in which the impoundment (1324-N) was enlarged and the percolation pond (1324-NA) was lined. The impoundment received anion/cation regeneration effluent from the 163-N Water Treatment Plant. Treatment occurred when the waste was neutralized by mixing of acidic and caustic effluents in the impoundment. Discharge operations ceased in 1991.

Ecology approved the closure plan in a letter dated July 16, 1998. In September 2001, closure activities were initiated under the Hanford Facility Resource Conservation and Recovery Act (RCRA) Permit. Closure activities included removal of the engineered structures and verification sampling. Sample results confirm that performance standards for direct exposure, protection of groundwater, and protection of the Columbia River have been met. These LWDFs have been backfilled and revegetated.

Groundwater contamination attributable to these facilities remains above the secondary drinking water standard for sulfate. Therefore, these LWDFs will be required to undergo postclosure groundwater monitoring under the RCRA Permit. Corrective action to remove/treat the sulfate is addressed in the 100-NR-2 Operable Unit Record of Decision.

DISCUSSION

- In September 2001, closure activities were initiated at the impoundments. Structural debris including concrete, the impoundment liner, and piping were excavated and disposed of at an inert demolition landfill in the 100-H Area. Soils were not required to be excavated.
- Verification sampling was conducted after closure activities. Chemical analysis demonstrated that remaining soil are below the closure plan requirements.
- Under the RCRA Permit, this is a Modified Closure (as opposed to a clean closure) due to the remaining sulfate plume in groundwater. Therefore, groundwater monitoring will continue into a postclosure care period for the 1324-N/NA LWDFs.

-
- A permit modification, upon Ecology approval of the closure certifications, will be initiated for the identification of postclosure actions needing to be taken during the postclosure care period.

CONCURRENCES

1. An independent, registered, Professional Engineer Certification of Closure Statement;
2. The President of Bechtel Hanford, Inc. has signed the Owner/Operator Closure Certification for the 1324-N/NA LWDFs as the facility co-operator.

RECOMMENDATIONS

We recommend that the U. S. Department of Energy, Richland Operations Office sign the Certification of Closure of the 1324-N/NA LWDFs.